

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 **Claim 1 (original):** Method for operating an automatic
2 device (2) by means of an electronic directing system, said
3 system comprising at least one first electrical cable
4 (1,4,5,6) connected to at least one first signal generator
5 (3,7,8) and at least one sensing system (11,12,13) arranged
6 on said device (2), said sensing system (11,12,13)
7 detecting at least one magnetic field being transmitted via
8 said cable (1,4,5,6) and propagating through the air, the
9 sensing system transmitting a processed signal to at least
10 one driving means which contributes to the movements of
11 said device in relation to a surface,

12 characterized in that said first signal generator
13 (3,7,8) transmits a current through said first cable
14 (1,4,5,6), said current during a part of time is in a state
15 of rest were it is substantially constant, said state of
16 rest periodically being interrupted by at least one first
17 characteristic current pulse (20).

1 **Claim 2 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that said
3 sensing system (11,12,13) adapts the time intervals (28,29)

4 within which the system (11,12,13) detects magnetic fields
5 based on the properties of said first current pulse (20).

1 **Claim 3 (original):** Method according to claim 2
2 characterized in that said adaptation refers to the
3 synchronization of frequency at which said sensing system
4 (11,12,13) operates, which is being made by said system
5 (11,12,13) based on said first current pulse (20).

1 **Claim 4 (currently amended):** Method according to ~~any~~
2 ~~of the claims 2 - 3~~claim 2, characterized in that said
3 adaptation refers to the synchronization of said time
4 intervals (28,29), which is being made by said sensing
5 system (11,12,13), is based on the periodicity, time
6 occurrence and/or the durability of said first current
7 pulse (20).

1 **Claim 5 (currently amended):** Method according to ~~any~~
2 ~~of the claims 2 - 4~~claim 2, characterized in that said time
3 intervals (28,29) are being adapted so that the sensing
4 system (11,12,13) is able to detect the presence of current
5 pulses (20,22,24,26) transmitted from said directing
6 system, said sensing system (11,12,13) during the await of
7 the next pulse (20,22,24,26) to appear disregards pulses
8 occurring outside said time intervals (28,29).

1 **Claim 6 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 current in each of said electrical cables (1,4,5,6) is
4 being transmitted by one of said signal generators (3,7,8),
5 said generator (3,7,8) synchronizing each current pulse
6 (20,22,24,26) it transmits with other current pulses
7 (20,22,24,26) in the search system, in that no current
8 pulses (20,22,24,26) in the search system will occur at the
9 same point of time within the same period (21).

1 **Claim 7 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 current in each of said electrical cables (1,4,5,6) is
4 being transmitted by one of said signal generators (3,7,8),
5 said generator (3,7,8) synchronizing each current pulse
6 (20,22,24,26) it transmits with other current pulses
7 (20,22,24,26) in the search system, in that the time
8 distance between each current pulse (20,22,24,26) occurring
9 in said search system is large enough so that signals
10 generated in the sensing system (11,12,13) that originate
11 from a current pulse (20,22,24,26) has partly decayed
12 before generated signals that originate from another
13 current pulse (20,22,24,26) occurs.

1 **Claim 8 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in said

3 current in more than one electrical cable (1,4,5,6) is
4 transmitted from the same signal generator.

1 Claim 9 (currently amended): Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that said
3 current has the same period (21) irrespective of the
4 electrical cable (1,4,5,6) through which it is transmitted.

1 Claim 10 (currently amended): Method according to
2 claim ~~[[9]]~~1, characterized in that the period (21) for the
3 search system is selected by the user of the search system.

1 Claim 11 (currently amended): Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that every
3 current pulse (22,24,26) has a by the search system defined
4 time of occurrence adapted to said first current pulse
5 (20).

1 Claim 12 (currently amended): Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that a
3 transmitted current pulse (20,22,24,26) in each electrical
4 cable (1,4,5,6) contains a course of events in time where
5 the pulse is positive and negative in relation to said
6 state of rest for the current.

1 Claim 13 (currently amended): Method according to ~~any~~

2 ~~of the preceding claims~~claim 1, characterized in that said
3 first current pulse (20) has a pulse characteristic which
4 differs from the characteristic of other current pulses
5 (22,24,26) in the search system.

1 **Claim 14 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that said
3 sensing unit (11,12,13) detects the magnetic field
4 (20,22,24,26) transmitted from at least one of said
5 electrical cables (1,4,5,6) in the whole area in which the
6 device is intended to operate.

1 **Claim 15 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that at
3 least one of said electrical cables (6) is connected
4 directly to one of said other electrical cables (1).

1 **Claim 16 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 sensing unit (11,12,13) only detects the magnetic field
4 transmitted from one of said electrical cables (1,4,5,6) in
5 a part of the area in which the device is intended to
6 operate.

1 **Claim 17 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that at

3 least one signal generator (3,7,8) transmits information to
4 the sensing system (11,12,13) through a selective change of
5 the properties of an information current pulse (22,26) from
6 period to period, said information current pulse (22,26)
7 occurring in an electrical cable at a certain point of time
8 in relation to the first current pulse (20).

1 **Claim 18 (original):** Method according to claim 17
2 characterized in that said selective change of the
3 properties for the information current pulse (22,26)
4 constitutes in a choppy current direction.

1 **Claim 19 (original):** Method according to claim 17
2 characterized in that said selective change of the
3 properties for the information current pulse (22,26)
4 constitutes in selectively inhibited current pulses.

1 **Claim 20 (original):** Method according to claim 17
2 characterized in that said selective change of the
3 properties for the information current pulse (22,26)
4 constitutes in current pulses with selectively different
5 pulse width.

1 **Claim 21 (currently amended):** Method according to ~~any~~
2 ~~of the claims 17 - 20~~claim 17, characterized in that
3 different operations are activated at the device (2) based

4 on said information, said operations for instance being a
5 regulation of the movements of said device (2) across the
6 surface in relation to an electrical cable (1,4,5,6).

1 **Claim 22 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 sensing system (11,12,13) only detects current pulses
4 (20,22,24,26) if they constitute[[s]] in magnetic field
5 pulses with one essential field direction.

1 **Claim 23 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 sensing system (11,12,13) detects the positive and negative
4 flank of a current pulse (20,22,24,26), whereby the time
5 distance between these two flanks settles the processing
6 said system makes based on the detected flanks.

1 **Claim 24 (currently amended):** Method according to
2 claim [[23]]1, characterized in that the sensing system
3 (11,12,13) detects said flanks by detecting occurred
4 voltage pulses.

1 **Claim 25 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 sensing system (11, 12,13) with knowledge of said occurred
4 voltage pulses (50/50') detects on which side of a cable

5 (1,4,5,6) at least a part of the device (2) is being
6 positioned.

1 **Claim 26 (original):** Method according to claim 25
2 characterized in that said detection refers the fact that
3 the sensing unit (11,12,13) detects the magnetic field
4 (50/50') which is being generated from at least one current
5 pulse (45) and based on the properties (50/50') of said
6 magnetic field detects on which side of a cable (1,4,5,6)
7 at least a part of the device (2) is being positioned.

1 **Claim 27 (currently amended):** Method according to ~~any~~
2 ~~of the claims 25 - 26~~claim 25, characterized in that said
3 detection refers the fact that the sensing unit (11,12,13)
4 detects the magnetic field (50/50') which is being
5 generated from at least one current pulse (45) and based on
6 the relation between at least one via said magnetic field
7 (50/50') detected current pulse (45) and at least one via
8 said magnetic field (50/50') detected state of rest detects
9 on which side of a cable (1,4,5,6) at least a part of the
10 device (2) is being positioned.

1 **Claim 28 (currently amended):** Method according to ~~any~~
2 ~~of the claims 25 - 27~~claim 25, characterized in that the
3 sensing unit (11, 12,13) detects on which side of a cable
4 (1,4,5,6) at least a part of the device (2) is positioned

5 by generating an interpretation signal (T) based on the
6 detected magnetic field, the characteristics of said
7 interpretation signal being dependent on which side of said
8 cable at least a part of the device (2) is being
9 positioned.

1 **Claim 29 (original):** Method according to claim 28
2 characterized in that the sensing system (11,12,13) with
3 knowledge of the characteristics of the interpretation
4 signal (T) operates the automatic device (2) in relation to
5 a cable (1,4,5,6).

1 **Claim 30 (original):** Method according to claim 29
2 characterized in that said characteristics refers to a
3 pulse ratio corresponding to the time division between
4 those occasions during which a characteristic signal pulse
5 occurs and those occasions during which no such signal
6 pulse occurs.

1 **Claim 31 (original):** Method according to claim 30
2 characterized in that said pulse ratio has an asymmetric
3 characteristic.

1 **Claim 32 (currently amended):** Method according to ~~any~~
2 ~~of the claims 29 - 32~~claim 29, characterized in that the
3 sensing system (11, 12,13) based on the detection on which

4 side of a cable (1,4,5,6) at least a part of the device (2)
5 is being positioned operates the automatic device (2) in
6 relation to a cable (1,4,5,6).

1 **Claim 33 (currently amended):** Method according to ~~any~~
2 ~~of the claims 29 - 32~~claim 29, characterized in that the
3 operation refers to the fact that the device (2) is being
4 manoeuvred to a certain side of a cable (1,4,5,6).

1 **Claim 34 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that said
3 current pulse and/or voltage pulse and/or signal pulse
4 refers to a square wave.

1 **Claim 35 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that pulse
3 ratio, which corresponds to the time division between those
4 occasions during which a characteristic current pulse
5 occurs and those occasions during which no characteristic
6 current pulse occurs, is asymmetric.

1 **Claim 36 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the
3 sensing unit (11,12,13) through detecting information from
4 current pulses (20,22,24,26) or through detecting
5 information from the user, activates an operation which

6 uses the knowledge said sensing system has about the
7 electrical cable (1,4,5,6) collected by detecting
8 additional information sent by the electrical cable
9 (1,4,5,6).

1 **Claim 37 (original):** Method according to claim 36
2 characterized in that said activation of an operation means
3 that the device when approaching an electrical cable
4 (1,4,5,6) substantially follows (31,32) said cable
5 (1,4,5,6) in one of its extension directions.

1 **Claim 38 (currently amended):** Method according to ~~any~~
2 ~~of the claims 36 - 37~~claim 36, characterized in that said
3 activation of an operation means that the device when being
4 within an area surrounded by an electrical cable (1,4,5,6)
5 and approaches said cable (1,4,5,6) changes direction and
6 moves (30) inside said area away from said cable (1,4,5,6).

1 **Claim 39 (currently amended):** Method according to ~~any~~
2 ~~of the claims 36 - 38~~claim 36, characterized in that said
3 activation of an operation means that a user via a control
4 device can control the movements and/or treatment that the
5 device is performing.

1 **Claim 40 (currently amended):** Method according to ~~any~~
2 ~~of the preceding claims~~claim 1, characterized in that the

3 sensing system (11,12,13) transmits information.

1 **Claim 41 (original):** Method according to claim 40
2 characterized in that said transmitted information is being
3 sent in the time interval between two occurring current
4 pulses (20,22,24,26).

1 **Claim 42 (original):** Electronic directing system
2 operating an automatic device (2), said system comprising
3 at least one first electrical cable (1,4,5,6) connected to
4 at least one first signal generator (3,7,8) and at least
5 one sensing system (11,12,13) arranged on said device, said
6 sensing system (11,12,13) detecting at least one magnetic
7 field being transmitted via said cable (1,4,5,6) and
8 propagating through the air, the sensing system
9 transmitting a processed signal to at least one driving
10 means which contributes to the movements of said device in
11 relation to a surface,

12 characterized in that said system comprises means by
13 which said first signal generator (3,7,8) transmits a
14 current through said first cable (1,4,5,6), said current
15 during a part of time being in a state of rest were it is
16 substantially constant, said state periodically being
17 interrupted by at least one first characteristic current
18 pulse (20).

1 **Claim 43 (original):** Electronic directing system
2 according to claim 42 characterized in that said current
3 has the same period (21) irrespective of the electrical
4 cable (1,4,5,6) through which it is transmitted.

1 **Claim 44 (currently amended):** Electronic
2 ~~search~~directing system according to ~~any of the claims 42 -~~
3 ~~43~~claim 42, characterized in that every current pulse
4 (22,24,26) has a by the search system defined time
5 occurrence adapted to said first current pulse (20).

1 **Claim 45 (currently amended):** Electronic directing
2 system according to ~~any of the claims 42 - 44~~claim 42,
3 characterized in that a transmitted current pulse
4 (20,22,24,26) in each electrical cable (1,4,5,6) contains
5 a course of events in time where the pulse is positive and
6 negative in relation to said state of rest for the current.

1 **Claim 46 (currently amended):** Electronic directing
2 system according to ~~any of the claims 42 - 45~~claim 42,
3 characterized in that said first current pulse (20) has a
4 pulse width which differs from the pulse width of other
5 current pulses (22,24,26) in the search system.

1 **Claim 47 (currently amended):** Electronic directing
2 system according to ~~any of the claims 42 - 46~~claim 42,

3 characterized in that said sensing unit (11,12,13) detects
4 the magnetic field (20,22,24,26) transmitted from at least
5 one of said electrical cables (1,4,5,6) in the whole area
6 in which the device is intended to operate.

1 Claim 48 (currently amended): Electronic
2 ~~searchdirecting~~ system according to ~~any of the claims 42~~
3 ~~47~~claim 42, characterized in that at least one of said
4 electrical cables (6) is connected directly to one of said
5 other electrical cables (1).

1 Claim 49 (currently amended): Electronic
2 ~~searchdirecting~~ system according to ~~any of the claims 42~~
3 ~~48~~claim 42, characterized in that at least one of the
4 electrical cables (1,4,5,6) is arranged above, within or
5 below the surface which the device (2) is intended to move
6 in relation to, said cable (1,4,5,6) thereby separates an
7 inner area of said surface being surrounded by the cable
8 (1,4,5,6) from an outside area outside said cable
9 (1,4,5,6).

1 Claim 50 (currently amended): Electronic
2 ~~devicedirecting system~~ according to ~~any of the claims 42~~
3 ~~49~~claim 42, characterized in that the sensing unit
4 (11,12,13) only detects the magnetic field transmitted from
5 one of said electrical cables (1,4,5,6) in a part of the

6 area in which the device (2) is intended to operate.

1 Claim 51 (currently amended): Electronic
2 ~~device~~directing system according to ~~any of the preceding~~
3 ~~claims~~claim 42, characterized in that an automatic device
4 (2) refers to a treating robot which comprises a treatment
5 system for treating said surface.

1 Claim 52 (currently amended): Electronic
2 ~~device~~directing system according to claim 51 characterized
3 in that the treatment system is operated based on
4 information received and/or stored for treatment operations
5 by the sensing system (11,12,1 3).

1 Claim 53 (currently amended): Electronic
2 ~~device~~directing system according to ~~any of the claims 51-~~
3 ~~52~~claim 51, characterized in that said device relates to an
4 automatic lawnmower, whereby said treatment system
5 constitutes in knives cutting the plants growing on said
6 surface.

1 Claim 54 (currently amended): Electronic
2 ~~device~~directing system according to ~~any of the claims 51-~~
3 ~~52~~claim 51, characterized in that said device relates to an
4 automatic vacuum cleaner, whereby said treatment system
5 relates to parts which a normal automatic vacuum cleaner is

6 equipped with for cleaning said surface, said parts for
7 instance being a brush roller and a suction device.

1 **Claim 55 (currently amended):** Electronic
2 ~~device~~directing system according to ~~any of the claims 51 -~~
3 ~~52~~claim 51, characterized in that said device relates to an
4 automatic cleaning robot, whereby said treatment system
5 relates to parts which a normal cleaning robot is equipped
6 with for cleaning a surface, such as tools for wet
7 cleaning.

1 **Claim 56 (new):** Method according to claim 1, wherein
2 the automatic device comprises a treating robot that
3 comprises a treatment system for treating said surface.